Mukilteo Multimodal Ferry Terminal

Application for the 2013 TIGER Discretionary Grants Program

Submitted to:
U.S. Department of Transportation
TIGER Discretionary Grants Program

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May 2013

Washington State Department of Transportation

Washington State Ferries

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The Washington State Department of Transportation Ferries Division seeks **$32.7 million of TIGER funding**, with **$86.6 million of State funds** and an **overall 61% project match**, to replace the ferry terminal in Mukilteo, Washington, 25 miles north of Seattle. The Mukilteo Multimodal Ferry Terminal (MMFT) project replaces the aging, seismically deficient terminal and relocates it to a nearby vacant brownfield. The new terminal increases efficiency and capacity, featuring separated and safer loading for pedestrians, priority loading for bicycles and High Occupancy Vehicles (HOVs), a six-bay bus transit center, and improved connections to the adjacent commuter rail station. The project will also remove a massive, dilapidated pier that is degrading water quality in Puget Sound. The MMFT implements the shared community vision of the City of Mukilteo and dozens of partner organizations.

The **total project cost is $140.9 million.** To date, $108.2 million has been secured, consisting of $21.6 million of federal funds and $86.6 million of state funds. WSF seeks to fill the remaining $32.7 million gap with TIGER funding which can be **obligated by May 5, 2014**. The project will yield a wide array of benefits, including the following:

- **State of Good Repair**: Replaces a 60-year-old, seismically deficient terminal built on eroded timber piles with a substantially more efficient facility that meets modern seismic codes. Relocates terminal to a new site, allowing for continued operation of the existing terminal during construction.

- **Economic Competitiveness**: Strengthens transportation in growing Seattle region by replacing a ferry terminal serving 3.8 million riders – 58% of whom are commuters – and handling over four million tons of freight per year. Increases efficiency and capacity by loading pedestrians and vehicles simultaneously. Improves turn-around time by 41%, reducing delays for freight and reducing costs to employers and employees through more efficient transit.

- **Livability**: Restores community access to waterfront, providing shoreline access via a waterfront promenade. Expands affordable, healthy transportation options including bicycling and walking. Improves connections to public transit, and improves accessibility for people with limited mobility. Provides new open spaces and improves connections to beaches, parks, and trails.

- **Environmental Sustainability**: Improves multimodal options including bus, rail, walking, and biking, inducing mode shifts expected to save over 8,000 metric tons of CO_2 annually by 2030. Removes massive pier including 3,900 piles and 7,000 tons of toxic debris from Puget Sound.

- **Safety**: Greatly reduces seismic risk. Increases safety by separating terminal from public streets, enabling controlled access. Separates pedestrian and vehicle traffic for safer loading.

- **Project Readiness**: The Final Environmental Impact Statement was signed in May 2013, and a Record of Decision is expected by August 2013. The project will be advertised May 5, 2014, construction will run from 2014 to 2017, and the new terminal will open in July 2017.

- **Innovation**: Designs new terminal to LEED Silver standards. Utilizes regional ORCA smartcard as fare payment. Employs innovative methods to protect marine mammals and an endangered seabird.

- **Partnership**: The project is backed by a vibrant partnership of private employers, Federally Recognized Indian Tribes and Nations, transit agencies, environmental organizations, and all levels of government. MMFT benefits commuters to Boeing, Microsoft, shipyards, and aerospace businesses, and capitalizes on two decades of planning and tremendous support across the greater Seattle region.

I. PROJECT DESCRIPTION

The Washington State Department of Transportation Ferries Division (also known as Washington State Ferries, or WSF) seeks TIGER funding to replace the ferry terminal in Mukilteo, Washington, 25 miles north of Seattle. The Mukilteo Multimodal Ferry Terminal (MMFT) project replaces the aging and seismically deficient terminal and relocates the new facility east of the downtown area to a vacant brownfield. The new terminal features dedicated lanes and priority loading for bicycles and HOVs, a six-bay bus transit center, and improved connections to the adjacent commuter rail station. Overhead loading – a pedestrian sky bridge connecting the terminal building to the upper passenger deck of the ferry vessel – will enable simultaneous loading of pedestrians and vehicles. As part of the project, WSF will remove a massive, dilapidated pier that is degrading water quality in Puget Sound.

Figure 1: Mukilteo lies 25 miles north of Seattle

The Mukilteo-Clinton ferry route connects Whidbey Island to the greater Seattle area, a region of 3.7 million people with a job base of 1.7 million. The region's strong industrial base includes hundreds of aerospace businesses and shipyards. The four-county region has experienced rapid population growth, increasing 34% from 1990 to 2010. Residents and employers rely on this critical ferry route to move people and goods across Puget Sound, and to link Whidbey Island residents with vital public services.

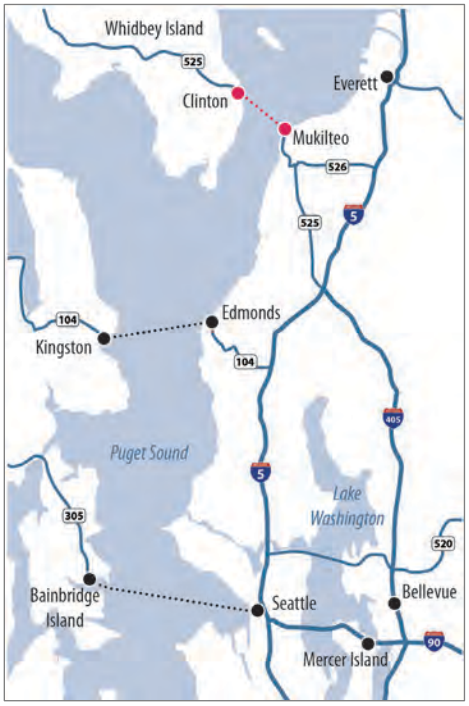

Figure 2: Mukilteo-Clinton route connects Whidbey Island to the Seattle region

Mukilteo-Clinton is a vital route with growing ridership

Mukilteo-Clinton is WSF's busiest route for vehicle traffic and has the second highest annual ridership. As part of State Route (SR) 525, the ferry route is an NHS route and key freight corridor. In 2012, the route carried:

- **3.8 million people;**
- **2.1 million vehicles; and**
- **over 4 million metric tons of freight.**

Ridership is estimated to grow to 5.9 million by 2030, fueled by employment growth on Whidbey Island and the mainland. Commuters account for 58% of Mukilteo-Clinton ridership. Of these commuters, 19% are employed in the manufacturing sector - the highest among all routes and double the system-wide average. The area is home to Boeing, which has a 1,025-acre aircraft manufacturing plant just three miles from the Mukilteo terminal. In addition to Boeing, rider destinations include downtown Seattle, downtown Everett, the University of Washington, and Naval Air Station Whidbey Island.

HOVs commuting through the Mukilteo terminal include 46 registered vanpools and 19 registered carpools which each day transport over 250 employees of Boeing, Microsoft, and multiple shipyards and aerospace businesses.

Sailing time between Mukilteo and Clinton is approximately 15 minutes. Without ferry service, the drive from Clinton to Mukilteo is over 100 miles and two hours. The ferry route bypasses several congested corridors and chokepoints, including the Interstate-5 (I-5) north-south corridor.

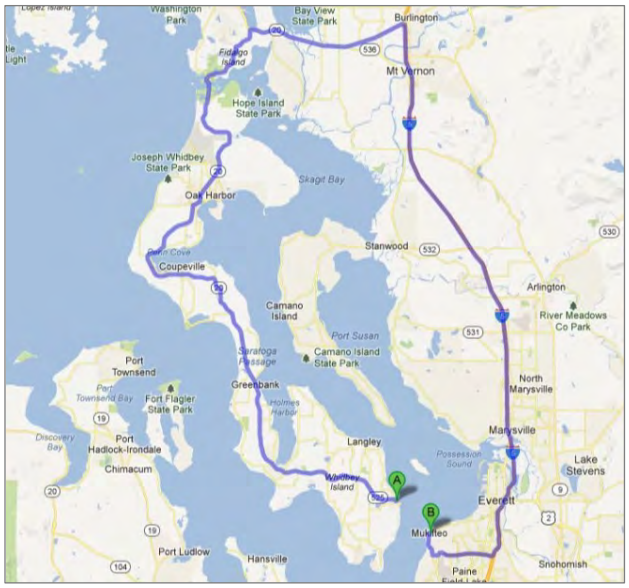

Figure 3: Driving takes over two hours

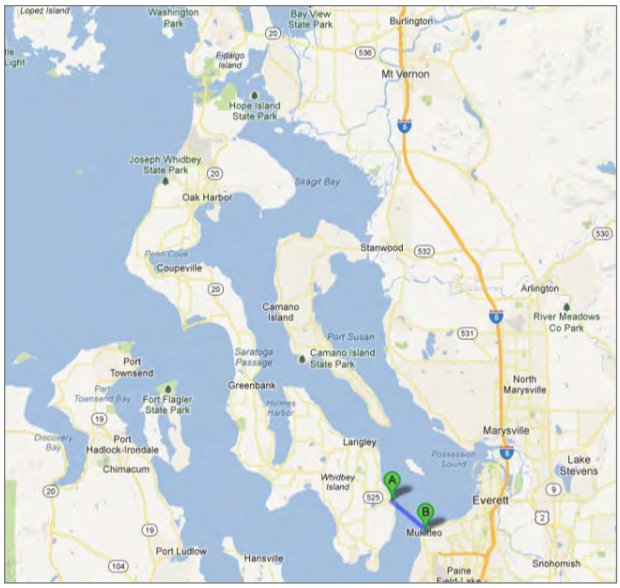

Figure 4: The ferry crossing takes 15 minutes

Existing ferry terminal is inadequate, seismically deficient, and in need of replacement

The Mukilteo ferry terminal was built in 1952, is seismically vulnerable, and is in urgent need of replacement. Since the terminal was built, the region's population has grown substantially and the terminal is inadequate for both current and future needs. Cars and pedestrians are forced to share the transfer span (the lift bridge connecting the ferry to the pier) for loading and unloading; these operations must be sequenced and significantly increase turn-around time. Furthermore, overhead loading is infeasible within the existing location and facility footprint. Vehicles drive onto the ferry via a public street that bisects the Mukilteo downtown, leading to conflicts between vehicles and pedestrians. In peak periods, the vehicle queue extends one half mile outside of the terminal onto SR 525, obstructing access to downtown and increasing greenhouse gas (GHG) emissions.

Despite a location that abuts a major commuter rail line and is served by several bus routes, the terminal has poor connections to these transit modes. The two bus bays are located uphill and across a major intersection; under the current configuration, bus crowding and congestion cause schedule delays, and there is no room for additional bays. In addition, the Mukilteo commuter rail station is 2,000 feet from the existing terminal, and the route between the ferry and the station has narrow sidewalks and is missing ADA ramps and bike lanes. Figures 5 and 6 further illustrate the challenges at the existing terminal.


Figure 5: Existing Mukilteo ferry terminal, built in 1952

Figure 6: Challenges at existing terminal

Without improvement of the existing terminal and layout, ridership growth is expected to affect sailing times, reducing capacity and resulting in missed ferry-bus and ferry-train connections. Because of these deficiencies and challenges, replacement of this terminal is urgently needed.

New, relocated terminal will improve efficiency and multimodal connectivity

The Mukilteo Multimodal Ferry Terminal project will replace the existing terminal with a relocated, multimodal facility designed to current seismic codes. The new terminal will be built on the site of a former Air Force fuel tank farm located 1,700 feet east of the existing facility. MMFT will separate ferry traffic from local traffic, provide dedicated lanes and loading priority for both bicycles and HOVs. Overhead loading, a pedestrian sky bridge, will enable simultaneous loading of pedestrians and vehicles. A new, six-bay bus transit center will be served by two transit agencies, and include connection to a third agency. The new terminal will be located 1,255 feet closer to the Mukilteo commuter rail station, improving connections between ferry and rail.

Beyond the transportation improvements, the new terminal will provide significant environmental enhancements. WSF will remove the massive tank farm pier including 3,900 piles and over 7,000 tons of toxic debris from Puget Sound. In addition, the Mukilteo waterfront will be restored – along with the community's access to the waterfront.

Relocation will avoid shutting down the ferry route by allowing the existing facility to remain in operation while the new facility is constructed. Construction of the new terminal will be phased; Phase 1 includes site demolition, pier removal, and dredging, and Phase 2 includes construction of berthing structures, the terminal building, overhead loading, bus transit center, and other terminal components. The project schedule and a Statement of Work are included in the Project Readiness section.

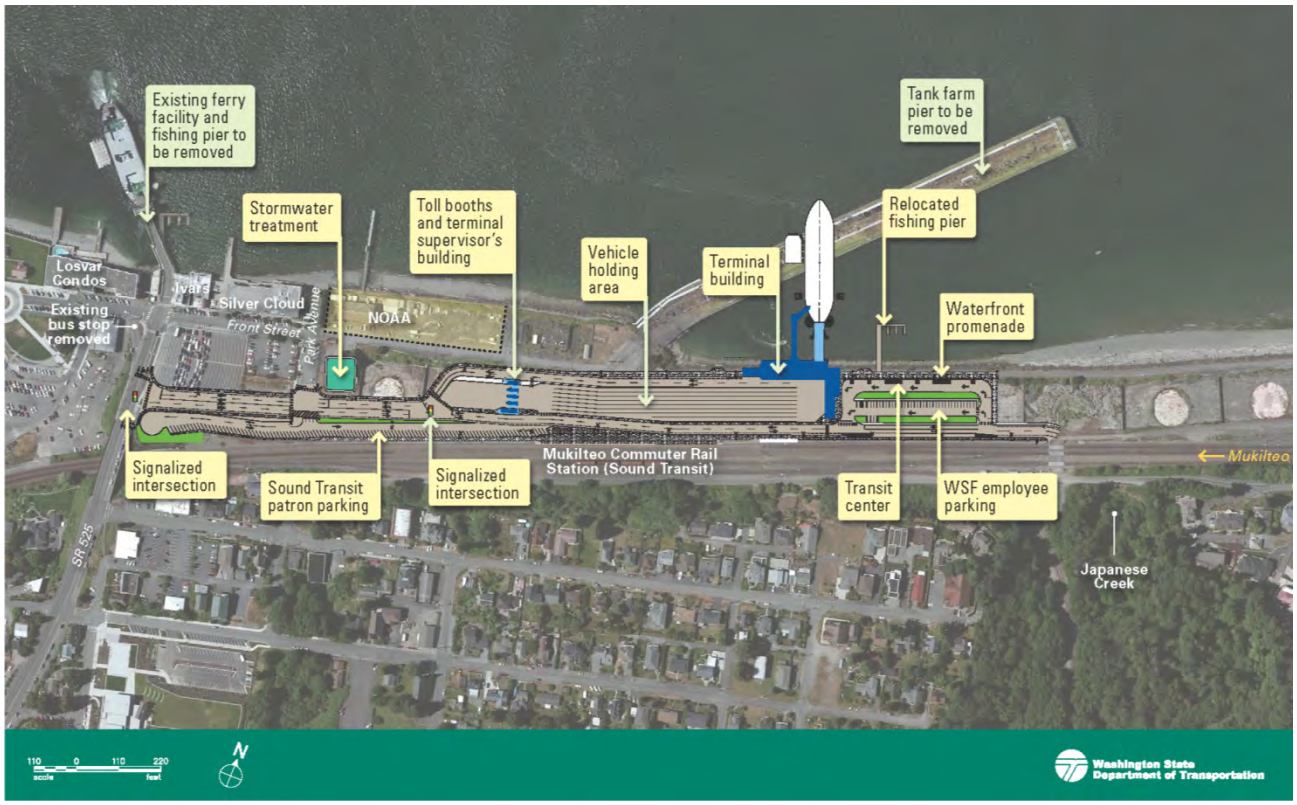

Figure 7: Layout of Mukilteo Multimodal Ferry Terminal

Improvements for ferry, bus, rail, walking, bicycling, and driving (including HOVs)

- **Ferry:** MMFT will provide a new, highly efficient terminal on the second busiest ferry route in the system. To accommodate ridership growth, a new, 144-car, 1,500-passenger vessel that is currently under construction will be assigned to the route in 2014. This increases capacity compared to the two vessels that currently operate on the route, which each carry 124 vehicles and 1,200 passengers.
- **Bus:** The Mukilteo ferry terminal sits at a critical junction bordering the service areas of five transit agencies: WSF, Sound Transit, Community Transit, Everett Transit, and Island Transit. Island Transit serves the Clinton ferry terminal on Whidbey Island, while Community Transit and Everett Transit will provide direct service to MMFT via the six new bus bays. The terminal's new location and layout improve ferry-bus connections, expanding bus access from two to six bays and providing space and right-of-way for buses entering the terminal. Community Transit service to Mukilteo is described here: http://www.commtrans.org/mukilteo/.
- **Rail:** Sound Transit's Mukilteo Station opened in 2008, and is served by Sounder commuter rail. Relocating the ferry terminal reduces the distance between the ferry terminal and Mukilteo Station by 63%, from 2,000 feet to 745 feet. This commuter rail line is part of the integrated passenger rail corridor that runs from California to Canada and serves as a backbone for north-south rail traffic.
- **Walking:** Improvements to the pedestrian environment include wider sidewalks, avoidance of busy intersection crossings, and shorter distances between transit modes. Overhead loading – a pedestrian sky bridge connecting the terminal building to the upper passenger deck of the ferry vessel – allows for simultaneous, safer loading of pedestrians and vehicles. This improves efficiency by saving time during unloading and loading, and expands capacity by allowing greater throughput.

- **Bicycling:** Bicyclists will enter the terminal via dedicated bike lanes and have access to covered, on-site bike parking. They will also enjoy priority boarding ahead of vehicles. The location and configuration of MMFT provide a safer overall environment for bicyclists.
- **Driving and HOVs:** MMFT encourages ridesharing through dedicated HOV lanes, a passenger drop-off/pick-up area, and priority loading for HOVs. The Mukilteo-Clinton route has 46 vanpools and 19 carpools that will benefit from the improved amenities. Moreover, the MMFT will reduce the peak-period vehicle queue length on SR 525, reducing the projected queue length in 2040 by 33%, from 4,300 to 2,900 feet (see Figure 8).

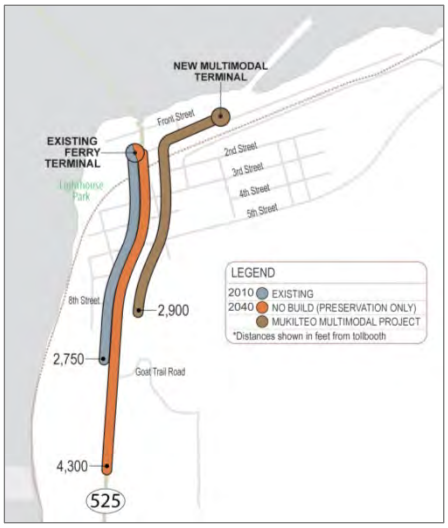

Figure 8: MMFT will reduce peak-period vehicle queues by 33%

Timeline and TIGER Request

The total project cost is $140.9 million, of which $108.2 million has been secured. WSF seeks to fill the $32.7 million gap with TIGER funding which can be obligated by May 5, 2014. The project's timeline includes the following:

- May 2013: FTA and WSF signed the Final EIS (See Appendix A and the project's online library)
- August 2013: EIS Record of Decision
- May 2014: Phase 1 is advertised
- 2014 – 2017: Construction of Phases 1 and 2
- July 2017: New ferry terminal opens

II. Project Parties

The Washington State Department of Transportation Ferries Division (also known as Washington State Ferries, or WSF) is the party seeking the grant and constructing the new terminal. As the largest ferry system in the nation, WSF transports a total of 22 million passengers and 10 million vehicles throughout the greater Puget Sound area each year, serving 20 communities, 9 islands, 8 counties, and British Columbia, Canada. There are 450 daily sailings across 10 routes. The fleet of 22 passenger-vehicle vessels ranges in capacity from 34 autos and 200 passengers to 202 autos and 2,500 passengers. As a mass transit system, WSF carries millions of commuters to and from work. As part of the highway system, WSF provides access to areas that are otherwise cut off from the road network. A Washington State Ferries system map is included in Appendix B.

Shared community vision

The MMFT project is the culmination of two decades of planning, resulting in a strong partnership across dozens of organizations, including the City of Mukilteo, Sound Transit, the Port of Everett, and 11 Federally Recognized Indian Tribes and Nations. More than a transportation project, MMFT implements a shared community vision that seeks to:

- redevelop a vacant waterfront brownfield, with a multimodal transit hub as the anchor;
- revitalize the Mukilteo downtown, by relocating the ferry terminal eastward and restoring community access to the waterfront and business district; and
- respect and commemorate the historic and cultural significance of the area for the Tribes.

The Mukilteo Multimodal Ferry Terminal (MMFT) project is the culmination of two decades of planning, resulting in a strong partnership across multiple sectors. Primary partners include FTA, the City of Mukilteo, Sound Transit, the Port of Everett, and Island County, as well as 11 Federally Recognized Indian Tribes and Nations. A list of key project parties is shown below. The Partnership section describes partner contributions and lists letters of support spanning the private sector, chambers of commerce, environmental organizations, all levels of government, transit agencies, and planning organizations. Letters of support are included in Appendix C.

Project Parties		
Federally Recognized Indian Tribes and Nations	**Federal | State | Regional | Local | Transit**	
Lummi Tribe of the Lummi Reservation, WA	Federal Highway Administration	
Muckleshoot Indian Tribe of the Muckleshoot Reservation, WA	Federal Transit Administration	
Nooksack Indian Tribe of WA	National Oceanic and Atmospheric Administration	
Samish Indian Tribe, WA	United States Air Force	
Sauk-Suiattle Indian Tribe of WA	Washington State Department of Natural Resources	
Snoqualmie Tribe, WA	Island County	Skagit/Island RTPO
Stillaguamish Tribe of WA	Puget Sound Regional Council	Snohomish County
Suquamish Indian Tribe of the Port Madison Reservation, WA	City of Everett	Port of Everett
Swinomish Indians of the Swinomish Reservation, WA	City of Mukilteo	Port of South Whidbey
Tulalip Tribes of the Tulalip Reservation, WA	Community Transit	Island Transit
Upper Skagit Indian Tribe of WA	Everett Transit	Sound Transit

Collaboration with Federally Recognized Indian Tribes and Nations

Due to the historical and cultural importance of the Mukilteo waterfront area, FTA and WSF have worked closely with Tribes throughout the life of the project. The area is part of their historic lands and was an important tribal gathering place. FTA and WSF are collaborating with Tribes to protect the archaeological features of the site and incorporate commemorative design elements into the new terminal, as described in the Livability section.

III. Grant Funds and Sources/Uses of Project Funds

The total project cost is $140.9 million. To date, $108.2 million has been secured, consisting of $21.6 million of federal funds and $86.6 million of state funds. WSF seeks to fill the gap of $32.7 million with TIGER funding. In the event of a smaller TIGER award, WSF is prepared to make effective use of the funds and move forward with construction. One option would be to postpone overhead loading, saving $15.4 million in design and construction; this component could be added to the facility in future years. As illustrated in the State of Good Repair section, overhead pedestrian loading substantially increases the safety and efficiency of the new terminal. Simultaneous loading of vehicles and pedestrians helps reduce turn-around time by 41% and ensures fewer delays for people and freight. However, the Benefit-Cost Ratio is still positive without overhead loading, as illustrated in the Benefit-Cost Analysis in Appendix D.

Strong state commitment

- An additional $19.7 million was approved by State Legislature in 2013
- 61% matching funds in place

Strong state and federal support for project

The Washington State Legislature recently increased the State's commitment to the project, approving an additional $19.7 million in the 2013 Legislative Session. Total state investment in the project, $86.6 million, amounts to an overall 61% project match. MMFT has benefitted from federal support totaling

$17.0 million from FTA and $4.6 million from FHWA, which account for 12% and 3%, respectively, of total project cost. The federal funds were provided through programs including Section 5307, Section 5309, and CMAQ, and the FHWA funds have been flexed to FTA.

Total project cost and funding by phase

Project Phase	State Funds	Federal Funds	Gap (TIGER Funds)	Total
Preliminary Engineering	$ 5,275,137	$ 21,594,863	$ -	$ 26,870,000
Right of Way	3,290,000	-	-	3,290,000
Construction	78,050,000	-	32,700,000	110,750,000
Total	**$ 86,615,137**	**$ 21,594,863**	**$ 32,700,000**	**$ 140,910,000**
Percent Share	61%	15%	23%	100%

Concurrent investment of $70 million by project partners

Our partner agencies are concurrently investing $70 million toward the shared vision of a vibrant multimodal transit hub, increasing the impact of federal investment in MMFT. Sound Transit is investing a total of $28.5 million in Mukilteo Station, which opened in 2008 and connects ferry riders to the regional commuter rail network and downtown Seattle. In addition to constructing the new station, they will break ground this summer on a station upgrade funded in part by FTA and FHWA. Sound Transit also plans to spend an additional $9 million for an adjacent park and ride facility. In 2008, the Port of Everett invested $30 million in a new intermodal facility east of the tank farm property, helping to reduce congestion on the rail line that Sound Transit commuter rail shares with BNSF and Amtrak. Finally, the City of Mukilteo is planning to spend $2.5 million on a pedestrian bridge over the BNSF tracks to improve neighborhood access to the waterfront and public transit. Our partners' investments of $70 million combine with $140.9 million for MMFT, for a total area investment of $210.9 million.

Organization	Project	Investment
City of Mukilteo	Pedestrian Bridge	$ 2,500,000
Port of Everett	Barge-to-Rail Transfer Facility	30,000,000
Sound Transit	Commuter Rail Station	28,500,000
Sound Transit	Park & Ride Facility	9,000,000
Total		**$ 70,000,000**

IV. Selection Criteria

A. Long-Term Outcomes

i. State of Good Repair

Although Mukilteo-Clinton is WSF's second busiest ferry route, the Mukilteo terminal is aging, seismically deficient, and inadequate for current and projected ridership. Replacement of the terminal has already been significantly deferred, increasing delays and shutdowns on this critical corridor. If left unrepaired, the condition of these assets will threaten safety, efficiency, and economic competitiveness.

Replaces ferry terminal that is over 60 years old and seismically deficient

Built in 1952, when ridership and surrounding density were a fraction of what they are today, the Mukilteo terminal is past the end of its useful life, inadequate, and in need of replacement. The structures and pier are built on timber piles, which have eroded and been eaten away over time and which contain a toxic wood preservative that is polluting Puget Sound. The terminal does not meet current seismic standards, and sits on deep, liquefiable soils that are highly susceptible to shifting during an earthquake. Potential impacts from an earthquake range from regional transportation disruption to injury and loss of life. The new terminal is being designed to withstand a 1,000-year seismic event, compared to its current 70-year earthquake readiness level.

Figure 9: Existing terminal has eroded timber piles and is seismically deficient

Increases capacity and reduces turn-around time

The existing terminal is inadequate for current and projected ridership. At peak periods, vehicle demand significantly exceeds capacity. Ridership is expected to grow steeply in coming decades, with the majority of growth coming from walk-on passengers rather than vehicles. Although this is precisely the shift WSF is working toward, additional pedestrians will mean longer delays until MMFT is completed, due to the current sequenced loading process for pedestrians and vehicles.

The MMFT is designed to reduce delays and accommodate growing ridership demands. Overhead loading – a pedestrian sky bridge connecting the terminal building to the upper passenger deck of the ferry vessel – will allow for simultaneous loading of pedestrians and vehicles. Additionally, terminal relocation separates ferry vehicle traffic from local surface traffic, eliminating the loading breaks currently required to accommodate SR 525/Front Street traffic movements.

The Mukilteo-Clinton route is served by two vessels simultaneously, with 30-minute headways that allow 15 minutes for the ferry crossing and 15 minutes for loading and unloading (turn-around). As part of the EIS, turn-around times were analyzed for the existing terminal today, the existing terminal in 2040 if it were preserved in place (No Build), and MMFT in 2040 (see Figure 10). Without MMFT, turn-around time is estimated to increase to 17 minutes by 2040, impacting headways and reducing capacity. With MMFT, turn-around time in 2040 is estimated to take 10 minutes, a 41% faster turn-around that will assure high on-time departure rates.

Quicker turn-around time

MMFT will make loading and unloading time **41% faster**. Estimated turn-around time in 2040 is:

- 10 minutes with MMFT
- 17 minutes without MMFT

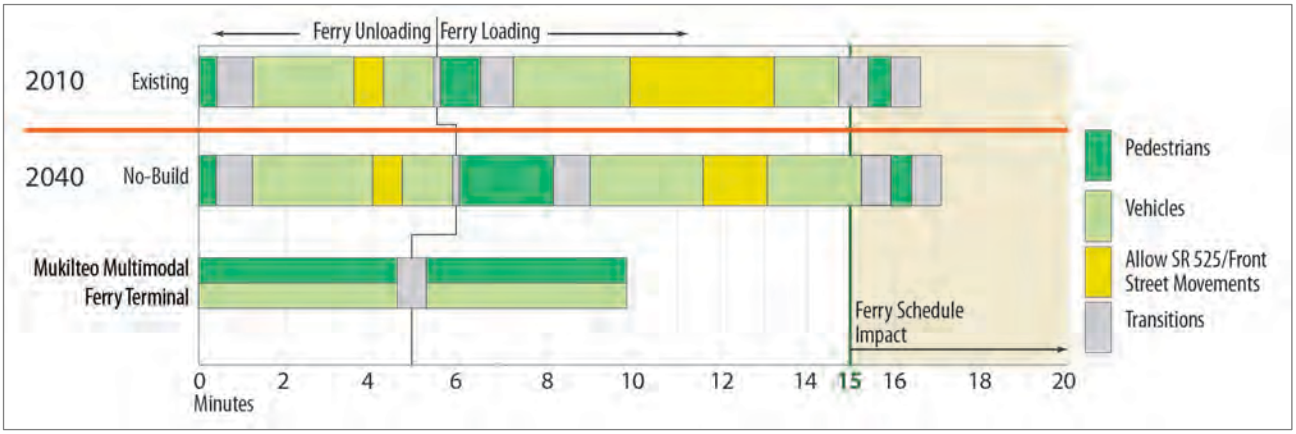

Figure 10: Turn-around time in 2040 will be 41% faster with MMFT

Improves efficiency and connections across multiple transit modes

Forecasted ridership growth from walk-on passengers demonstrates the urgent need for improved connections between ferries and other transit modes. The current facility provides poor connections between bus, rail, and ferry, which significantly hamper the efficiency and reliability of the transportation network in this area. The two bus bays are located uphill and across a major intersection, with a current configuration that does not allow for bus service expansion. In addition, the Mukilteo commuter rail station is 2,000 feet from the ferry terminal, and the route between the ferry and the station has narrow sidewalks and is missing ADA ramps and bike lanes. The MMFT project includes a new, six-bay bus transit center and provides space and right-of-way for buses entering the terminal. By relocating the terminal, MMFT reduces the distance between the ferry and the commuter rail station by 63%, from 2,000 feet to 745 feet.

Project is aligned with asset management system and has up-front capitalization

WSF maintains a strong, thorough asset management system, a system which ranks replacement of the Mukilteo terminal as a top capital priority. All WSF assets are inspected at least once every three years, providing information to update the Life Cycle Cost Model (LCCM). The LCCM is used to identify revenue requirements and prioritize preservation work, and the State Legislature also uses the LCCM for performance-based budgeting and reduction of long-term costs.

WSF is well prepared to implement this project, with up-front capitalization and sufficient revenue for operations and maintenance. Long-term funding is provided both by the State and by farebox revenue. WSF's farebox recovery ratio, 66%, exceeds the ferry industry average of 49%, according to a 2010 study by the Passenger Vessel Association. Furthermore, Mukilteo-Clinton is one of WSF's most financially sustainable routes. In 2012, the Mukilteo-Clinton farebox recovery ratio was 88%, the third highest of all WSF routes. This route's high ridership and cost effectiveness help ensure continued funding for operating and maintenance needs.

ii. Economic Competitiveness

The Puget Sound region's vibrant economy relies on a strong, multimodal transportation network. The Mukilteo-Clinton ferry route carries 2.1 million vehicles and 3.8 million people each year between Whidbey Island and the greater Seattle area, connecting commuters with 1.4 million jobs in King County (including Seattle) and Snohomish County (including Mukilteo). The ferry route is also vital for freight movement. The region is well served by rail, and trucks use multiple roadways to carry freight to final destinations, particularly those across Puget Sound. SR 525, the NHS corridor that includes the Mukilteo-Clinton ferry, carries over four million metric tons of freight per year.

Fewer delays for commuters and freight

Commuters account for 58% of Mukilteo-Clinton ridership. Of these commuters, 19% are employed in the manufacturing sector - the highest among all routes and double the system-wide average. The area is home to Boeing, whose 1,025-acre manufacturing plant for 747, 767, 777, and 787 aircraft is located just three miles from the Mukilteo terminal. In addition to Boeing, rider destinations include downtown Seattle, downtown Everett, and the University of Washington. The ferry route also serves Naval Air Station Whidbey Island and its 10,000 employees. HOVs commuting through the Mukilteo terminal include 46 vanpools and 19 carpools which each day transport over 250 employees of Boeing, Microsoft, and many shipyards and aerospace businesses.

Figure 11: Rendering of MMFT, featuring overhead loading (a pedestrian sky bridge) for walk-on passengers

For people and freight, this 15-minute ferry ride is the only viable connection to the Seattle region; the alternative is a two-hour drive via a bridge at the island's northern end. Greater efficiency at the new terminal will reduce delays for people and freight, increasing economic productivity. The primary driver of MMFT's improved efficiency is simultaneous loading for pedestrians and vehicles, which reduces delays and yields economic benefits for commuters and freight. The secondary driver is the elimination of local traffic conflicts. During loading and unloading, breaks are currently required to allow for local traffic movement. The relocated terminal will be separated from local traffic and will no longer bisect the downtown, eliminating these delays. Combined, overhead loading and terminal relocation will reduce turn-around time by 41%, as described in the State of Good Repair section.

Improved transportation for growing Seattle metropolitan region

The Seattle metropolitan region, home to 3.7 million people, is experiencing rapid population growth. From 1990 to 2010, the population increased by 34%. Within the four-county region, Snohomish County, which includes the City of Mukilteo, is the fastest growing county with 53% population growth between 1990 and 2010.

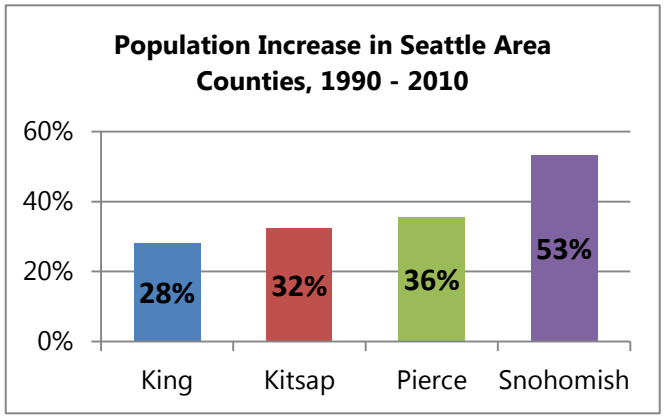

Figure 12: Snohomish County is fastest-growing county in the Seattle area

Increased economic productivity of Mukilteo waterfront

WSF will help revitalize the former tank farm site, 19 acres of prime waterfront property that has been unused since 1989. Relocating the ferry terminal to the tank farm vastly increases the economic

productivity of this vacant brownfield. WSF has entered into a strong partnership with the City of Mukilteo, the Port of Everett, and Sound Transit to guide the use of the tank farm property, which will include the new ferry terminal, a public beach, and waterfront promenades.

Figure 13: MMFT will redevelop a vacant brownfield that was formerly a fuel tank farm

Furthermore, the existing terminal site – which sits amid mixed-use waterfront properties – will be vacated and become available for development. This terminal sits in a prime location on a cumulative one acre, and the site's development will have a salutary impact on adjacent land uses. Based on the value of adjacent parcels, freeing up this lot for development will infuse downtown Mukilteo with between $500,000 and $1,000,000 million of commercial real estate, according to the Snohomish County Assessor's website. With the newly-relocated terminal, cars waiting to board the ferry will no longer bisect the downtown, improving the appeal of the entire business district.

Reduced congestion and improved movement for exports and cargo

The greater Seattle area is a major gateway to both Asia and Canada. The Port of Seattle is the eighth largest port in the nation and supports the region's many manufacturers and exporters. It is an integral asset for leading exporters such as Boeing, which supports airlines and government customers in 150 countries and employs 170,000 people.

MMFT connects employees with major exporting employers; it also carries over four million tons of freight each year. Because the driving alternative to the Mukilteo-Clinton ferry route involves traveling on Interstate 5 (I-5), this ferry route effectively reduces congestion on I-5. The I-5 north-south corridor runs along the West Coast and is home to one of the nation's busiest freight border crossings located in Blaine, WA, where I-5 intersects with Canada. Reduced I-5 congestion expedites the movement of cargo and exports. The value of truck freight passing through the Blaine border crossing in 2012 totaled $16.7 billion, of which $5.3 billion had an origin or destination in Washington State.

Creation of 1,681 total job-years

A total of 1,681 job-years will be created by the MMFT project. Assuming one job-year is created for every $76,923 in government spending, and assuming 2080 job-hours per job-year, one job-hour is created for every $36.98 in expenditures. The job creation estimates below are based on future expenditures only; they do not reflect prior expenditures.

Total job creation

While total project cost is $140.9 million, prior expenditures and planned Right-of-Way (ROW) expenditures are excluded from the job creation analyses, resulting in $129.3 million toward job creation.

Project Phase	Spending by Phase (Q3 2013 forward)*	Direct Job-Years**	Indirect Job-Years**	Induced Job-Years***	Total Job-Years
Preliminary Engineering	$ 18,555,624	60	60	121	**241**
Construction	110,750,000	360	360	720	**1,440**
Total	**$ 129,305,624**	**420**	**420**	**840**	**1,681**

*Assumes no jobs created by ROW expenditures.
**Assumes 25% of the job-year benefits are attributed to "direct project" related activities, and another 25% are attributed to "indirect" project related activities, during project PE and CN phases.
***Induced job-years represent the remaining 50% of the job-year benefits attributed to jobs created or preserved in the local, regional or national economy during the project.

Job creation by quarter

Period	Spending 2013 dollars*	Direct, Indirect, and Induced Job-Hours**
2013 - Q3	$ 2,361,038	63,846
2013 - Q4	2,361,038	63,846
2014 - Q1	2,607,146	70,502
2014 - Q2	2,607,146	70,502
2014 - Q3	9,400,671	254,210
2014 - Q4	9,400,671	254,210
2015 - Q1	3,291,305	89,002
2015 - Q2	3,291,305	89,002
2015 - Q3	5,662,364	153,120
2015 - Q4	5,662,364	153,120
2016 - Q1	5,537,500	149,743
2016 - Q2	5,537,500	149,743
2016 - Q3	19,973,654	540,120
2016 - Q4	19,973,654	540,120
2017 - Q1	15,020,188	406,171
2017 - Q2	15,020,188	406,171
2017 - Q3	798,946	21,605
2017 - Q4	798,946	21,605
Total	**$ 129,305,624**	**3,496,637**

*Assumes no jobs created by ROW expenditures.
**Assumes 25% of the job-hour benefits are attributed to "direct project" related activities, and another 25% are attributed to "indirect" project related activities, during project PE and CN phases. Induced job-hours represent the remaining 50% of the job-hour benefits attributed to jobs created or preserved in the local, regional or national economy during the project.

Robust apprenticeship and Disadvantaged Business Enterprises (DBE) programs

Through union-supported best-practice hiring programs and apprenticeship programs, the MMFT project will create job opportunities for low-income and minority workers. The project directly supports apprenticeship programs for civil and marine construction professionals by requiring apprenticeship utilization of 15% of labor hours by contractors.

WSDOT seeks to create the maximum opportunity for disadvantaged, minority, and women owned businesses, as well as small businesses and veteran-owned businesses. For federally-funded projects, WSDOT implements USDOT's Disadvantaged Business Enterprises (DBE) program and provides free assistance and business development for DBEs. DBE targets for the construction of MMFT are anticipated to be between 3 and 6%. For state-funded projects, WSDOT's additional programs include Minority and Women's Business Enterprises (M/WBE) and a Small Business Enterprise (SBE) initiative launching this summer with a 10% voluntary goal for SBE participation. In addition, WSDOT has a 3% voluntary goal for veteran owned businesses on state-funded contracts, a goal that includes service disabled veterans. WSDOT works closely with the State's Department of Veterans Affairs, which maintains a registry of Veteran/Servicemember Owned Businesses.

iii. Livability

This project has considerable positive impacts on livability and quality of life in the greater Seattle area.

Creates affordable and convenient transportation choices

MMFT significantly improves access to affordable and environmentally-friendly transportation modes. The expected mode shifts will improve air quality and public health, and reduce GHG emissions and dependence on oil. Pedestrian, bike, and transit improvements at MMFT are described in the Environmental section, and contribute substantially to a healthier and safer downtown and ferry terminal. Wider sidewalks, bicycle lanes, and transit upgrades will expand access to employment centers, educational opportunities, and services. The affordability and accessibility of these transit modes will particular benefit low-income households, non-drivers, and people with limited mobility. Unlike the existing terminal, the new terminal will be fully ADA-compliant and offer overhead pedestrian loading, a safer and more accessible boarding method for senior citizens and people with disabilities.

Multimodal improvements at MMFT are complimented by employer efforts to increase the use of transportation alternatives. Since 1991, state law has required employers with 100 or more employees to develop programs that encourage commuting alternatives to driving alone. The law seeks to reduce congestion, energy use, and air pollution. Many employers had programs in place prior to the law; for example, Boeing has had a commute reduction program since the 1960's, and currently has thousands of employees who use vanpools to commute. Employers frequently offer financial incentives for walking, biking, and taking public transit, as well as parking subsidies for carpools and vanpools.

Promotes equitable, affordable housing

The new terminal enhances connectivity for commuters, and more effectively links affordable residential areas in Snohomish and Island Counties to regional employment centers on the eastern side of Puget Sound and in the greater Seattle area. MMFT does so while providing affordable, sustainable alternatives to driving.

Enhances economic competitiveness

MMFT links regional growth centers by providing reliable access to employment centers, educational opportunities, and basic services, as well as expanded business access to markets. The Economic Competitiveness section describes the project's broad economic benefits.

Supports existing communities

Through the productive use of a vacant brownfield and through freeing up valuable downtown real estate, MMFT furthers community revitalization efforts and safeguards rural landscapes by avoiding the use of undeveloped land. This project will develop approximately five acres of the tank farm brownfield site. While the brownfield is in a prime location, the existing ferry terminal's configuration limits access to it. Furthermore, the tank farm property transfer agreement precludes residential development on the site. Combined, these factors reduce the likelihood of this property being redeveloped. The MMFT will contribute to the City of Mukilteo's 20% open space target and public access requirement for development on the tank farm, and will expand shoreline access.

The project also paves the way for transit-oriented, mixed-use development by freeing up the existing terminal site, which sits on a cumulative one acre. Relocating ferry traffic east of the business district allows the city to reclaim its waterfront core. Residents will have better access to downtown businesses and a waterfront park, and will enjoy reduced noise and pollution from idling cars. Development of the existing terminal site would contribute to the quality of life and economy of downtown Mukilteo, due to limited availability of commercially-zoned land.

Coordinates and leverages federal investment

The City of Mukilteo, Sound Transit, the National Oceanic and Atmospheric Administration (NOAA), the Port of Everett, and WSF are collaborating to make use of a vacant, waterfront brownfield, redeveloping the site to include a multimodal transit hub serving a large and vital region. Local, state, and federal agencies have joined to invest in several projects in the area of the Mukilteo ferry terminal. Federal investment via TIGER funding would capitalize on a total of $210.9 million being invested by WSF and its partner agencies, as described in Section III. Sound Transit has received $400,000 in CMAQ funding and $3.4 million in Section 5307 funding for upgrades to Mukilteo Station, and the Port of Everett's barge-to-rail transfer facility received a $15.5 million grant from Washington State.

Values communities and neighborhoods

- **Downtown Mukilteo:** The existing terminal causes traffic conflicts and congestion in the central waterfront district. The City of Mukilteo and its residents place great value on their downtown waterfront, and by relocating the ferry terminal, WSF will help preserve this beautiful, vibrant neighborhood. The relocated terminal will provide for a safer and more walkable downtown. Whereas today the waterfront is difficult to access due to the ferry traffic and the tank farm brownfield, the new configuration provides continuous shoreline access for the public. One popular destination that will be far more accessible is the Mukilteo Lighthouse Park, a 14-acre park with one mile of rocky beach located directly west of the existing terminal.

Figure 14: Rocky beach at Mukilteo Lighthouse Park

- **Tribal Communities**: This project has forged a strong collaboration with tribal communities. The site is culturally important as the location of the signing of the Point Elliott Treaty of 1855, which ceded tribal land in the Puget Sound region in exchange for hunting and fishing rights. In particular, the Elliot Point area contains a shell midden, a significant archaeological feature associated with indigenous cultures that includes fragments of tools and household goods. MMFT uses fill and pavement to avoid intersecting the midden, and buildings are being designed with foundations outside the midden. Additionally, FTA and WSF are collaborating with Tribes to incorporate commemorative design elements into the new terminal, including a passenger building design based on a longhouse, a traditional communal dwelling for northwest Tribes.

iv. Environmental Sustainability

WSF is firmly committed to environmental sustainability and multimodal transportation, and this project furthers those goals. The MMFT will increase use of cleaner, more efficient transit modes, improve water quality and ecosystems in Puget Sound, and reduce fuel consumption and emissions. Great care will be taken during construction to protect marine mammals and the marbled murrelet, an endangered seabird, as described in the Innovation section. These substantial environmental benefits have earned the project support from the Environmental Protection Agency, NOAA, WA State Department of Natural Resources, Western Washington Clean Cities Coalition, and Puget Sound Clean Air Agency.

Improved multimodal transit options

The project's many improvements to multimodal transit options are expected to yield a shift from driving alone to other modes, resulting in an annual reduction of 19,619,849 Vehicle Miles Traveled (VMT) by 2030. These reduced VMT will save 8,299 metric tons of carbon dioxide equivalent (CO_2e) annually by 2030. The Benefit-Cost Analysis (BCA) provides more detail in Appendix D.

- **Bus and rail:** Increased transit connectivity will encourage a shift to more efficient transit modes, reducing energy use and GHG emissions. The new terminal will feature a six-bay bus transit center and improved connections to the adjacent commuter rail station. A shift to more efficient modes may also reduce congestion on I-5, providing smoother mobility and reduced emissions.
- **Walking and biking:** Dedicated facilities for pedestrians and cyclists are a prime benefit of this project. The new terminal features overhead loading for pedestrians, and priority loading for bicycles – meaning bicyclists board the ferry ahead of all vehicles. Bicyclists will enter the terminal via dedicated bike lanes and have access to covered, on-site bike parking.

Removal of toxic tank farm pier

The Air Force tank farm pier was originally used to unload jet fuel from vessels, an operation that ended in the late 1970s. More than 1,300 feet long and 100 feet wide, the pier is so large that its timber piles account for 4% of all creosote-treated piles in Puget Sound and significantly degrade water quality. (Creosote is a carcinogenic tar-based wood preservative.) Removing this pier will:

- remove 3,900 creosote-treated timber piles – over 7,000 tons of toxic debris – from Puget Sound and substantially improve water quality;
- eliminate three acres of overwater coverage, opening shoreline for access and fishing; and
- improve aquatic ecosystems by eliminating overwater shading and a migration barrier, increasing a critical habitat for salmon, crabs, shellfish, and other marine species.

Figure 15: WSF will remove 1,300-foot-long tank farm pier

LEED® Silver certification

The new terminal building is being designed to meet the Leadership in Energy and Environmental Design (LEED) Silver standard. LEED and sustainable design elements being evaluated include Electric Vehicle (EV) charging stations, on-site renewable energy, and use of regional construction materials.The Innovation section provides more information on LEED elements of the new building.

Figure 16: Rendering of LEED Silver terminal building

Redevelopment of vacant brownfield site

Relocation of the ferry terminal will redevelop the tank farm property, a vacant brownfield site, also described in the Livability section. The Air Force has already gone to great lengths to clean up the site, removing the old fuel tanks and removing approximately 200,000 gallons of hydrocarbons (jet fuel) from the ground. The WA Department of Ecology stated in 2006 that no further remedial action or monitoring is necessary, clearing the way for WSF redevelopment of the site.

Reduced vehicle and ferry idling

The holding capacity of the new terminal is 266 vehicles, compared to the existing capacity of 216 vehicles. More drivers will be able to wait in the holding lanes rather than being backed up on the highway, and drivers are more likely to turn off their engine when waiting in the holding lanes. Idling by ferry vessels may also decrease. For safety reasons, ferries actively push against the docks during unloading and loading. 20 to 25% of total fuel is expended while the vessels are docked. By reducing vessel dwell times, the new terminal will allow for reduced fuel consumption and improved air quality.

Reduced emissions from increased ferry ridership, relative to driving around

A 2012 WSF study comparing driving to ferry travel found that taking the ferry contributes to fewer GHG emissions compared to driving around. A typical individual commuting between Clinton and Mukilteo saves 832 hours, $4,416, and 17,203 kg of carbon dioxide equivalent (CO_2e) annually by taking the ferry rather than driving around via the bridge at the northern end of Whidbey Island.

v. Safety

Safety is WSDOT's top priority, and security at transportation facilities is a national concern. The existing terminal has substantial safety risks including seismic vulnerability, pedestrian-vehicle conflicts in downtown Mukilteo, lack of ADA compliance, and lack of controlled access. MMFT will provide significant safety improvements in these areas and others.

New terminal meets current seismic standards

The existing terminal does not meet current seismic standards and is highly susceptible to earthquake damage. Earthquakes can cause adverse effects from ground motion, soil liquefaction and settlement, tsunamis, and earthquake-induced landslides. The project area is within an active earthquake region, lying a third of a mile from a major fault zone. A 70-year earthquake will cause the facility to collapse, and seismologists predict that the Pacific Northwest is past due for a much larger earthquake. Potential consequences of not providing for an improved facility range from severe regional transportation disruption to injury and loss of life. The new terminal is designed to withstand a 1,000-year seismic event.

Accident reduction for pedestrians, bicyclists, and vehicles, both in and outside terminal

Because of congestion caused by ferry traffic, pedestrians often make high-risk decisions to cross the SR 525/Front Street intersection during breaks in ferry traffic. Near misses between vehicles and pedestrians are common. Pedestrians who access the terminal, transit facilities, surrounding businesses, and Mukilteo Lighthouse Park compete with vehicles for access to this intersection. Other inadequate facilities include a lack of passenger drop-off/pick-up areas and poor bus access; both increase congestion and the risk of accidents. The new terminal's relocation east of downtown, and separation from public streets, will drastically reduce the risk of collisions among pedestrians, bicyclists, and vehicles. In addition, separated pedestrian loading and bicycle lanes will help protect ferry riders.

Accident reduction is also expected beyond the limits of the terminal. The project's many improvements to multimodal transit options are expected to yield a shift from driving alone to other modes, resulting in an annual reduction of 19,619,849 Vehicle Miles Traveled (VMT) by 2030. By 2030, these reduced VMT will result in 36 fewer accidents per year. The Benefit-Cost Analysis (BCA) provides additional detail in Appendix D.

Improved accessibility and ADA compliance

At the existing terminal, passengers boarding the ferry or traveling between the toll booth and terminal building must traverse routes that do not meet ADA requirements. MMFT will be fully ADA-compliant, with separated and safer pedestrian loading that is especially beneficial for people with limited mobility.

Relocated terminal provides controlled access, meeting federal requirements

The new terminal greatly increases safety on the Mukilteo-Clinton route via a layout that is physically separated from public streets and has controlled access. In the current configuration, vehicles access the terminal via public streets that bisect the ferry terminal property. The new layout complies with U.S. Coast Guard and Department of Homeland Security regulations, which require ferry systems to be able to secure terminal areas in the event of a security alert, emergency, or natural disaster. Reductions in the queue length of vehicles waiting to board the ferry will also improve access and response times for emergency response units.

Figure 17: Rendering of new terminal, featuring controlled access

Preparation for a rise in sea level

The new facility is being designed to address sea level rise. The existing ferry terminal is located within the 100-year Federal Emergency Management Agency (FEMA) floodplain. As an agency, WSDOT is preparing for a one-foot sea level rise over the next 50 years. MMFT will install seven feet of fill to avoid intersecting the midden, which has the additional benefit of elevating the terminal. Access roads will be in upland areas, and supporting facilities will be outside the 100-year floodplain.

Reduction of toxins in the water and air

As described, the project will eliminate over 7,000 tons of creosote-treated timber piles from Puget Sound, reducing toxin levels in fish eaten by residents who fish near Mukilteo. By improving efficiency and reducing vessel dwell times, MMFT will reduce the levels of diesel particulates released by vessels at the dock. Shorter vehicle queues will also improve air quality in downtown Mukilteo. The project's many improvements to multimodal transit options are expected to yield a shift from driving alone to other modes, resulting in an annual reduction of 19,619,849 Vehicle Miles Traveled (VMT) by 2030, which will save 8,299 metric tons of carbon dioxide equivalent (CO_2e) annually. See Appendix D for more detail.

vi. Project Readiness
Technical Feasibility

Design is underway and will progress rapidly upon acquisition of the tank farm property in July 2013. The design adheres to criteria in WSF's Terminal Design Manual, and design work to date has included geotechnical, structural, and traffic analyses; conceptual architectural layouts; sampling and analyses of sediments under the tank farm pier; construction staging plans; and property appraisals. Design for Construction Phase 1 will be completed by April 2014.

Basis of Estimate

The construction cost estimate is based on design completed in support of the EIS. The estimate includes a 4% construction contingency in accordance with WSDOT standards. Total construction cost has been escalated to mid-year of construction, assumed May 2016 at the time of the estimate. The estimate was used as the basis for a WSDOT-facilitated risk-based estimate analysis using Cost Estimate Validation Process (CEVP®) methodology. This process identifies project risks and quantifies the probable monetary impact of those risks in year-of-expenditure dollars. WSDOT reports the 60th percentile cost in summarizing the CEVP process, meaning there is a 6 in 10 chance the project can be completed for this amount or less. The CEVP analysis identified $10.4 million of risk for the construction phase, which is incorporated into the component costs in the project budget.

Statement of Work

The project will remove the existing ferry terminal and construct a new terminal on a portion of the tank farm as part of an integrated multimodal facility. The new terminal will have one vehicle slip, a two-story terminal building with overhead loading, a toll plaza with four toll booths, a terminal supervisor building, holding capacity for up to 266 vehicles, and a six-bay bus transit center. Major construction activities are described below. Figure 18 displays the marine components of a ferry terminal, and Appendix E includes a larger diagram along with a description of each component.

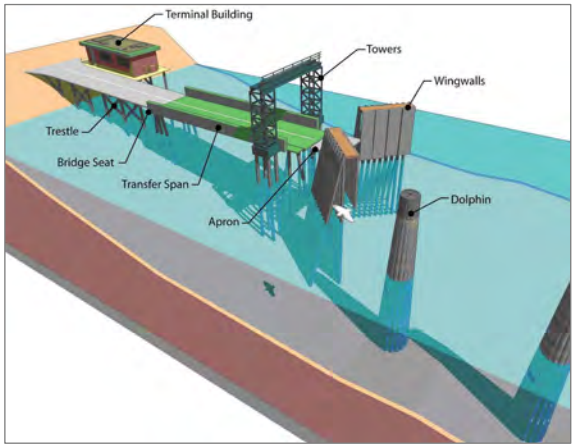

Figure 18: Marine components of ferry terminal

Phase 1

- Mobilization: Pre-construction work including development of plans for sediment and turbidity control, dredge material disposal, and demolition. Transport of materials and equipment to site.
- Site Demo, Pier Demo, and Dredging: Preparatory site demolition. Remove tank farm pier, including approximately 3,900 piles. Dredge navigation channel 500 feet wide to a depth of 30 feet to remove sediment mound beneath the pier.

Phase 2

- Mobilization: Pre-construction preparatory work including development of necessary environmental control plans; initial development of submittal documents; procurement of early work materials; and transport of materials and equipment to site.
- Earthwork, Utilities, and Paving: Install fill, complete grading, and extend utilities to terminal. Build four-lane access roadway, including sidewalks and bicycle lanes. Construct six-lane vehicle holding area with two adjacent exit lanes, and construct waterfront promenade.
- Berthing Structures: Construct new in-water structures including steel pile wingwalls and fixed dolphins. Relocate and reuse a floating dolphin from existing ferry terminal.
- Trestle & Transfer Span: Construct a hydraulic vehicle transfer span, bridge seat, trestle, and bulkhead, using concrete piles to support the trestle and bridge seat.
- Overhead Loading: Construct overhead loading passenger walkway connecting upper level of terminal building on shore side to passenger level of vessel.
- Terminal Building: Build a pile-supported, 16,100 sq. ft., two-story terminal building, spanning over the vehicle driveway to the trestle.
- Toll Booths & Supervisor Building: Construct four toll booths with a 2,790 sq. ft. terminal supervisor building as a separate structure above the toll booths.
- Bus Transit Center: Construct a transit center with six bus bays.
- Existing Terminal Demolition: Remove upland elements of existing terminal including buildings. Remove existing ferry berth and its marine structures, including 300 piles.

Financial Feasibility

The total project cost is $140.9 million, of which $108.2 million has been secured. If TIGER funding is awarded for the gap of $32.7 million, all funding will be in place to complete the project. In the event of a smaller TIGER award, WSF is prepared to make effective use of the funds and move forward with construction, as described in Section III. Engineering design is in progress, supported by state and federal funding. TIGER funds would be used for construction and can be obligated by May 5, 2014. The State has approved $86.6 million, an overall 61% project match. The total budget by phase and funding source is included in Section III, and the construction phase budget by activity is below.

Construction Budget					
	CONSTRUCTION ACTIVITY	**ESTIMATED COST**	**% OF TOTAL**	**TIGER FUNDS**	**STATE FUNDS**
PHASE 1	MOBILIZATION	$ 1,715,597	1.5%	$ 857,799	$ 857,799
	SITE DEMO, PIER DEMO & DREDGING	21,779,486	19.7%	16,334,614	5,444,871
PHASE 2	MOBILIZATION	4,056,886	3.7%	1,014,222	3,042,665
	EARTHWORK, UTILITIES & PAVING	13,138,858	11.9%	3,941,658	9,197,201
	BERTHING STRUCTURES	4,091,159	3.7%	1,227,348	2,863,811
	TRESTLE & TRANSFER SPAN	7,752,651	7.0%	2,325,795	5,426,856
	OVERHEAD LOADING	11,036,499	10.0%	4,852,031	6,184,468
	TERMINAL BUILDING	9,781,254	8.8%	-	9,781,254
	TOLL BOOTHS & SUPERVISOR BUILDING	2,809,124	2.5%	-	2,809,124
	BUS TRANSIT CENTER	2,146,534	1.9%	2,146,534	-
	EXISTING TERMINAL DEMO	745,962	0.7%	-	745,962
	CONSTRUCTION ACTIVITY SUBTOTAL	**$ 79,054,011**	71.4%	**$ 32,700,000**	**$ 46,354,011**
	SALES TAX, CN ENGINEERING, CONTINGENCY	21,010,300	19.0%	-	21,010,300
	TRIBAL MITIGATION, ART, AGREEMENTS	10,685,689	9.6%	-	10,685,689
	CONSTRUCTION PHASE TOTAL	**$ 110,750,000**	100.0%	**$ 32,700,000**	**$ 78,050,000**

Project Schedule

Figure 19 illustrates the overall project timeline; the subsequent table provides start and end dates for each project component. Due to in-water windows that protect aquatic species, pier removal will occur over two seasons. As further described in Section V, the NEPA process is nearly complete. The FEIS was signed by FTA and WSF in May 2013, and a ROD is anticipated by August 2013. Agreements, permitting, and ROW acquisition are proceeding on schedule.

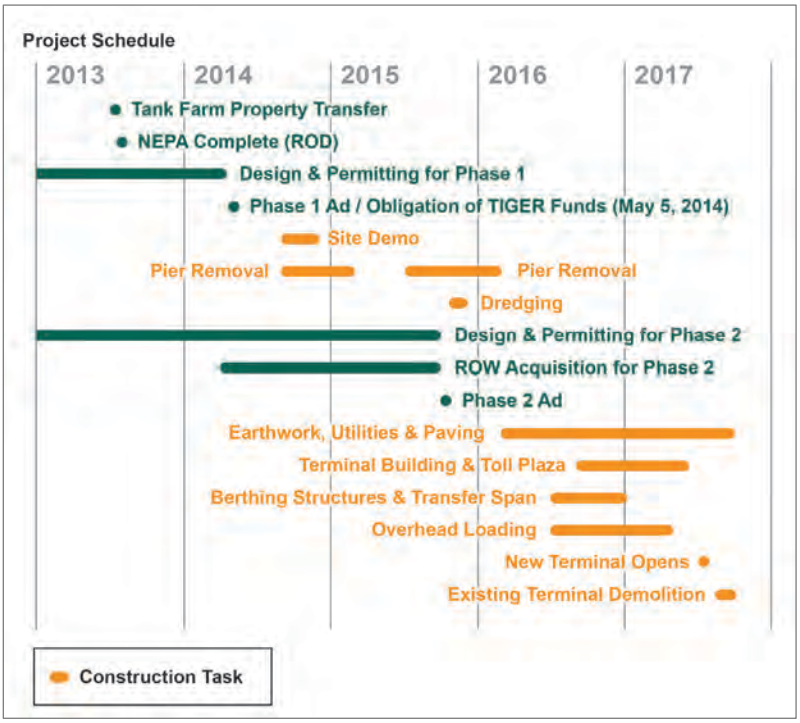

Figure 19: Project timeline for Mukilteo Multimodal Ferry Terminal

Project Schedule				
	Phase 1		Phase 2	
Planned Start of Final Design	07/01/13		09/02/13	
Planned Completion of Final Design	04/04/14			
Planned Completion of NEPA	08/22/13		08/22/13	
Planned Start of Right of Way Acquisition	-		03/11/14	
Planned End of Right of Way Acquisition	-		09/26/15	
Planned PS&E Approval Date	04/18/14			
Planned Construction Contract Advertisement Date	05/05/14		10/05/15	
Planned Construction Contract Execution Date	07/30/14		02/17/16	
Planned Construction Start Date	08/11/14		03/09/16	
Construction Dates	**Start**	**End**	**Start**	**End**
MOBILIZATION (PHASE 1)	08/11/14	09/12/14	-	-
SITE DEMO, PIER DEMO & DREDGING	09/01/14	02/15/16	-	-
MOBILIZATION (PHASE 2)	-	-	03/09/16	04/29/16
EARTHWORK, UTILITIES & PAVING	-	-	04/11/16	09/01/17
BERTHING STRUCTURES	-	-	10/10/16	01/13/17
TRESTLE & TRANSFER SPAN	-	-	07/06/16	01/13/17
OVERHEAD LOADING	-	-	07/06/16	04/28/17
TERMINAL BUILDING	-	-	09/05/16	04/28/17
TOLL BOOTHS & SUPERVISOR BUILDING	-	-	09/05/16	03/10/17
BUS TRANSIT CENTER	-	-	12/12/16	03/10/17
EXISTING TERMINAL DEMO	-	-	09/05/17	09/29/17
Planned Project Substantial Completion Date:	02/15/16		09/29/17	
Planned Project Closeout Date:	03/25/16		12/22/17	

Agreements

- **Memorandum of Agreement (MOA) for Cultural Resources (Section 106):** The MOA stipulates the measures needed to avoid, minimize, or mitigate adverse effects to historic properties. The Draft MOA was completed in October 2012, coordination to date has been favorable, and approval by tribal councils and consulting parties is anticipated by July 2013.
- **Agreement with Usual and Accustomed (U&A) Treaty Tribes:** WSF has been actively working with the Tribal Councils and staff of the four tribes with U&A treaty rights in the Mukilteo area: the Tulalip Tribes, Swinomish Tribe, Suquamish Tribe, and the Lummi Nation. An agreement is expected by August 2013.

Permitting

Project permitting is in progress and on schedule, including the in-water permits listed below.

- **Endangered Species Act:** The U.S. Fish and Wildlife Service and National Marine Fisheries Service expect to conclude their consultation by June 30, 2013, providing Biological Opinions which are required for the ROD.
- **U.S. Army Corps of Engineers:** Section 10 and Section 404 permits are expected by March 2014, in advance of Construction Phase 1.

- **Other permits** include an Incidental Harassment Authorization (NOAA), Hydraulic Project Approval (WA Department of Fish and Wildlife), Shoreline Substantial Development Permit (City of Mukilteo), and 401 Water Quality Certification (WA Department of Ecology). WSF is preparing these permits and will secure them in advance of Construction Phase I.

Right-of-Way (ROW) Acquisition

The U.S. Air Force is transferring approximately 19 acres of the Mukilteo Tank Farm to the Port of Everett, expected to be completed by July 2013. WSF and the Port of Everett have a draft agreement in place to complete a simultaneous no-cost property exchange, securing five acres of the tank farm for the new ferry terminal.

Figure 20: Tank farm property to be transferred, with tank farm pier in background

In addition to the property exchange, two small parcels totaling one half acre need to be acquired. The first parcel is currently leased by WSF. The second parcel houses a glass studio, and WSF has been coordinating with the property owner for over six years. ROW acquisition is expected to occur on schedule. Appraisals and negotiation are planned for 2014, with acquisition expected by September 2015, prior to beginning Phase 2 of construction.

Assessment of Project Risks and Mitigation Strategies

WSDOT conducts risk-based estimating workshops for all projects over $10 million, described further in the Technical Feasibility section. As part of the Risk Management Plan, a risk registry is regularly reviewed by the project team. The registry has 19 active risks; the most significant are listed below in order of impact.

Cost Risks

1. **Usual and Accustomed (U&A) Areas Treaty:** Fishing rights may not be resolved among the Tribes. The strategy is mitigation via weekly tribal coordination meetings with FTA to ensure tribal coordination is moving forward effectively.
2. **Project Budget:** Additional funding is required to complete construction. The strategy is avoidance through close collaboration between project and grants staff. Existing grants are being fully utilized and WSF is aggressively pursuing additional funding.
3. **Hazardous Material, Sediment Quality, and Pier Materials**: Sediment contaminants of concern will require further monitoring. The strategy is mitigation via strategic coordination with the WA

Department of Ecology and Army Corps of Engineers. The sediment Sampling and Analysis Plan has been prepared and approved, and WSF will conduct additional investigation and monitoring once the tank farm property is transferred.

Schedule Risks

1. **Project Budget:** Detail is provided above.
2. **Hazardous Material, Sediment Quality, and Pier Materials**: Detail is provided above.

B. INNOVATION

WSF drives innovation by applying progressive technology and management practices to the delivery of cost effective and efficient transportation. Alternative project delivery via a design-build process is being evaluated for feasibility. MMFT's many innovations are outlined below.

LEED® Silver certification and sustainable building design

The passenger terminal building at the MMFT is being designed to LEED Silver standards. Buildings designed to LEED requirements reduce waste, conserve energy and water, and reduce harmful GHG emissions. LEED and sustainable design elements being evaluated for MMFT include Electric Vehicle (EV) charging stations, on-site renewable energy, water use reduction, and use of regional construction materials. A Filterra® bioretention filtration system will be used to collect and treat stormwater at the new facility. This innovative system uses a combination of landscape vegetation and a filter media to naturally remove bacteria, metals, and suspended solids.

To commemorate the historic and cultural significance of the site, WSF is collaborating with the Tribes on the design of the new terminal; innovative elements such as a longhouse design for the passenger building are further described in the Livability section.

Mitigation of environmental impacts and protection of marine mammals

Extensive efforts will be taken to mitigate the impacts of dredging, pile removal, pile driving, and other marine components of the project. During pile driving, the impact zone will be monitored for marine mammals and for the marbled murrelet, an endangered seabird. If an animal enters the impact zone, construction will be halted until the animal exits the zone. WSF will also monitor in-water noise levels during impact driving. In addition, water quality will be sampled during construction to ensure turbidity is being contained. Best practices will be implemented during dredging and pile pulling to handle potentially contaminated sediments.

Figure 21: Endangered marbled murrelet

Utilization of smartcard fare payment

Seven Puget Sound transit agencies came together in 2009 to develop a regional smartcard for fare payment. The ORCA (One Regional Card for All) card is accepted across four modes – ferry, bus, light rail, and commuter rail. The ORCA partnership includes WSF, Community Transit, Everett Transit, and Sound Transit, enabling a single, seamless, interconnected transit network throughout the region.

Transit innovations by partner agencies serving MMFT

Complementing WSF's efforts are innovations by other transit agencies that will service MMFT. In 2009, Community Transit and Everett Transit jointly implemented Bus Rapid Transit (BRT) with 28 stations along a 17-mile corridor that includes Mukilteo. Bike racks are available inside the bus, a valued feature for cyclists connecting to the ferry. Community Transit is also one of only three U.S. cities using double-

decker buses for public transit. Launched two years ago, these buses serve the busiest routes from Snohomish County to downtown Seattle and have seen increasing ridership. Finally, Community Transit and Everett Transit have several bus routes designed especially for Boeing workers, and Community Transit has over 90 vanpools that travel to Boeing (see http://www.commtrans.org/boeing/).

Cost savings through fuel hedging

WSF makes innovative efforts to reduce capital and operating costs. The cost of fuel for ferry vessels has grown from 10% of the operating budget in 2000 to a current share of 23%. Vessel crews have developed innovative fuel-saving techniques; in addition, WSF began a fuel hedging program in 2011 that seeks to reduce total fuel cost and price volatility. The hedging program has saved $1.2 million to date.

C. PARTNERSHIP

Jurisdictional and Stakeholder Collaboration

The Mukilteo Multimodal Ferry Terminal capitalizes on extensive planning and public involvement, and has garnered tremendous regional support. It is the culmination of two decades of analysis by the City of Mukilteo, WSF, Sound Transit, and the Port of Everett to improve safety, multimodal connectivity, and capacity at the ferry terminal.

In 1995, the City of Mukilteo completed a programmatic EIS, recommending relocation of the ferry terminal to the tank farm property. WSF proceeded with extensive planning, including geotechnical, archaeological, and hazardous material evaluation, discussions with Tribes, and coordination among participating agencies. Community input was solicited through a public outreach campaign and more than 50 public meetings. In 2010, FTA and WSF reinitiated the NEPA process, completing an EIS that was signed in May 2013. The thorough preparation and planning invested in this complex project have built real alignment among stakeholder expectations. The result is a vibrant partnership, a shared vision, and a well prepared project team poised to proceed with construction.

Support from 29 private, public, environmental, and transit organizations

This interagency partnership is demonstrated by letters of support from 29 organizations and legislators, included in Appendix C: City of Everett, City of Mukilteo, Clinton Chamber of Commerce, Clinton Ferry Advisory Committee, Community Transit, Coupeville Ferry Advisory Committee, Everett Transit, Island County, Island Transit, Mukilteo Chamber of Commerce, National Oceanic and Atmospheric Administration, Penn Cove Shellfish, Port of Everett, Port of South Whidbey, Puget Sound Clean Air Agency, Puget Sound Regional Council, Silver Cloud Inns & Hotels, Skagit/Island Regional Transportation Planning Organization, Snohomish County, Sound Transit, State Representative Dave Hayes, State Representative Marko Liias, State Representative John McCoy, State Representative Mary Helen Roberts, State Senator Nick Harper, State Senator Paull Shin, Vigor Industrial, Washington State Department of Natural Resources, and Western Washington Clean Cities Coalition. The Environmental Protection Agency also supports the project; their EIS review states, "We support the proposed project and appreciate that it has the potential to produce a number of environmental benefits."

Transit improvements and capital investments by project partners are described throughout this document and include the following contributions:

City of Mukilteo: The City has been an active partner since the project's inception, implementing and funding planning efforts and coordinating land use decisions with WSF. In an effort to improve access to the waterfront and transit, they are investing $2.5 million in a pedestrian bridge over the BNSF tracks.

Sound Transit and Burlington Northern Santa Fe (BNSF) Railway:
In 2008, Sound Transit extended commuter rail service with a new $10.2 million-dollar station at Mukilteo. Sound Transit will break ground in June 2013 on $18.3 million in station upgrades, including a second platform on the south side of the tracks, a pedestrian bridge over the tracks connecting the platforms, and bicycle lockers. Sound Transit will also invest $9 million in an adjacent park and ride facility. BNSF Railway and Sound Transit have signed an agreement allowing commuter rail service through the year 2100.

Figure 22: Rendering of Mukilteo commuter rail station after upgrades

Island Transit: Island Transit operates free transit on Whidbey Island. Island Transit also has free park and ride lots to facilitate transit ridership, carpooling and vanpooling, reducing the cost of accessing the ferry terminal.

Port of Everett: The Port of Everett recently invested $30 million in a new intermodal facility, the Mount Baker Terminal, located on 1.5 acres east of the tank farm property. Opened in 2008, this facility transfers oversized aerospace containers from barge to rail. These containers are shipped to Paine Field Airport, home of the Boeing manufacturing plant, and previously caused two-hour-long BNSF mainline closures while enroute to the airport. The Mount Baker Terminal reduces rail congestion by cutting these closures down to 30 minutes – benefitting the Sound Transit commuter rail service which shares the BNSF mainline. The Port of Everett has also installed electrical and communication infrastructure to support development of the tank farm property, and they plan to restore and re-open a public beach on the eastern end of the tank farm property.

Federally Recognized Indian Tribes and Nations: The project's extensive coordination with Tribes is described in the Project Parties and Livability sections. MMFT's design recognizes the site's archaeological features and takes care to protect the midden. The terminal building and overall facility will feature design elements commemorating the historic importance of the site.

National Oceanic and Atmospheric Administration (NOAA): NOAA's Northwest Fisheries Science Center operates the Mukilteo Research Station, a premier center for seawater research. This research center is located between the existing and relocated terminal sites. NOAA has been collaborating on the proposed redevelopment of the tank farm property, and is considering future improvements such as expanded lab space and an educational outreach area. With MMFT in place, NOAA will also benefit from improved transportation to the center for staff, students, and the public.

Disciplinary Integration

WSF has worked to ensure a multidisciplinary approach and involvement by a variety of stakeholders by launching interagency coordination efforts early in the NEPA and planning processes. The MMFT's design draws on expertise from a variety of technical disciplines, and is based on years of outreach and public feedback. This is reflected in the project's goals as well as its design, which respects and enhances the site's cultural and environmental resources. The Project Parties section lists the project partners, and the Public Involvement chapter of the Final EIS lists all cooperating and participating agencies.

The project is aligned with – and is the product of – local and regional land-use and transportation plans. Our project partners have a shared vision of redeveloping the vacant brownfield tank farm property as a multimodal transit hub and the anchor of a revitalized area. MMFT is included in the City of Mukilteo's Comprehensive Plan, Sound Transit's Sound Transit 2 plan, Skagit-Island Counties' Metropolitan & Regional Transportation Plan, the Port of Everett's Tank Farm Master Plan, and Puget Sound Regional Council's Transportation 2040 plan. The project's exceptional environmental benefits have earned it support from the EPA, the WA State Department of Natural Resources, and multiple other environmental organizations, as listed in the Partnership section.

D. Results of Benefit-Cost Analysis

This Benefit-Cost Analysis builds on work completed in September 2012, during WSF's Cost Estimate Validation Process (CEVP), to estimate costs and select the Preferred Alternative – the MMFT project. This approach estimates the net benefit based on the Net Present Value (NPV) of the proposed project relative to a baseline. The analysis determines the degree to which the Proposed Project differs from the Baseline in terms of all relevant costs, including capital, maintenance and operations, and ridership costs such as delays and the risk of missed sailings. Further detail on the methods and data points used is in Appendix D. The results – summarized below – demonstrate that the project will provide substantial benefits, and is therefore a worthy investment of public funds. The project's **total benefits range from $269.9 to $496.8 million** over its 40-year useful life, compared to **net costs of $61.2 to $69.6 million**.

	3% Discount Rate		7% Discount Rate		B/C Ratio	
	Net Costs	Net Benefits	Net Costs	Net Benefits	3%	7%
1. Capital & Life Cycle Costs	**$ 68.94**	**$ -**	**$ 60.60**	**$ -**		
1.a. Construction Costs	68.66	-	60.34	-		
1.b. Maintenance and Operational Assets	0.28	-	0.26	-		
2. Construction Impacts	**0.65**	**76.02**	**0.59**	**73.17**		
2.a. Impact of Outage on Ridership	-	76.02	-	73.17		
2.b. GHGs from Construction	0.65	-	0.59	-		
3. Elimination of Layout Inefficiencies	**-**	**215.99**	**-**	**88.82**		
3.a. Intersection Delays	-	1.52	-	0.72		
3.b. Safety Risk for Pedestrians	-	0.85	-	0.42		
3.c. Vehicle Accidents	-	0.09	-	0.04		
3.d. Delays from Transfer Span	-	213.53	-	87.63		
4. Freeing Existing Site for Development	**-**	**0.73**	**-**	**0.70**		
5. Changes in Travel Behavior	**-**	**204.11**	**-**	**107.21**		
5.a. GHG Reduction from Mode Shift	-	3.91	-	1.70		
5.b. Vehicle Operating Cost Savings	-	198.42	-	104.73		
5.c. Accident Reduction from Mode Shift	-	1.79	-	0.78		
Total	**$ 69.59**	**$ 496.84**	**$ 61.19**	**$ 269.91**	**7.14**	**4.41**

Dollars in millions

Baseline

Because WSF must replace existing terminal facilities at Mukilteo in the near future, a "No-Build" alternative is not a realistic option. Therefore, the baseline used in this BCA is an as-is replacement of existing facilities at the current location. This "Preservation-Only" alternative is the most realistic scenario if the MMFT project is not funded. Preservation-Only would require a six-month shutdown of the existing terminal during construction; in contrast, by relocating the terminal, the MMFT allows for continued operation of the existing terminal during construction.

Principal Costs

The net costs of the project consist entirely of the difference between the costs of constructing and maintaining the proposed project (MMFT) compared with the Preservation-Only Baseline, as well as the cost of the proposed project's higher GHG emissions from construction.

The Net Present Value (NPV) of the project's higher construction costs range from $60.3 to $68.7 million dollars. The cost of additional GHGs released from constructing the new terminal is between $262 and $277 thousand.

Principal costs
(NPV at 3 and 7% discount rates)
- Construction: $60.3 - $68.7 million
- GHGs from Construction: $0.26 - $0.28 million

Total: $60.6 - $69.0 million

Principal Benefits

The project's key benefits – and the ones rooted in the most concrete data – are:

1. Avoidance of the six-month service rerouting that would be necessary in the baseline scenario, which yields benefits of $73.2 to $76.0 million in cost savings to the public, and
2. Cumulative time savings gained by efficiency improvements at the terminal (enabling simultaneous loading of pedestrians and vehicles, and eliminating the shared intersection at the boarding area) which will produce $88.8 to $215.9 million in benefits over the life of the project.

Taken individually or together, these two benefits exceed the marginal cost of the MMFT. However, the project will also yield benefits in the form of induced travel behavior change by improving the accessibility of transit, ridesharing, and other alternatives to driving.

Principal benefits
(NPV at 3 and 7% discount rates)
- Avoidance of six-month service disruption: $73.2 - $76.0 million
- Efficiency improvements: $88.8 – $215.9 million

Total: $162.0 - $291.9 million

Benefits from Mode Shifts

Predicting long-term changes in travel behavior is a speculative endeavor, but evidence shows that improving access to transit and ridesharing boosts usage of these modes. This project's considerable improvements to transit infrastructure and ridesharing amenities are therefore projected to increase the number of non-driving passengers using the Mukilteo-Clinton route.

Reduced car trip estimates are based on projections from the WSF Long-Range Plan, which assume improved transit facilities at Mukilteo. Increases in the portion of non-drivers on the route (calculated as avoided auto trips) that are above the baseline projected for the ferry system as a whole are considered a benefit. Also, because the MMFT is not the only transit improvement planned in the area, the avoided car trip estimates are split by cost among the transit improvement projects planned for the area. (Additional detail is provided in the written notes accompanying the BCA spreadsheet.)

This mode shift – increased transit use and ridesharing – will produce three types of benefits, with estimated NPVs shown below:

1. **$1.7 - $3.9 million from reduced GHGs due to fewer Vehicle Miles Travelled (VMT);**
2. **$104.7 - $198.4 million in reduced vehicle operating costs; and**
3. **$0.8 - $1.8 million from traffic accidents prevented by reduced VMT.**

In short, travel behavior changes induced by MMFT will produce an **additional $107 to $204 million in benefits.**

Because of the inherent challenges in predicting travel behavior change, mode-shift-based benefit estimates are more uncertain than the efficiency improvement-based benefits described above. Evaluators may therefore wish to consider them separately, as shown below. However, it is reasonable to assume that removing the barriers to transit and ridesharing that exist at the current site will elicit some increase in use of these modes, and that this will produce significant benefits over the life of the project.

Comparison of results with and without mode shift benefits (from projected VMT reductions)

In addition to the inherent uncertainty involved with predicting travel behavior change, accounting for all the costs involved in such a shift is difficult. Some offsetting costs associated with increased transit ridership (such as possible increased travel time, and fares) are not fully captured in our BCA model. Therefore, it is useful to consider the total NPV of costs and benefits for the project with and without mode-split-derived benefits. The results are shown below.

	Results with Mode-Shift Benefits		**Results without Mode-Shift Benefits**		**Difference**	
Discount Rate	**3%**	**7%**	**3%**	**7%**	**3%**	**7%**
Net Benefits	$ 496.84	$ 269.91	$ 292.73	$ 162.69	$ 204.11	$ 107.21
Net Costs	69.59	61.19	69.59	61.19	-	-
Benefit/Cost Ratio	**7.14**	**4.41**	**4.21**	**2.66**	2.94	1.75

Dollars in millions

As shown above, **even with mode shift benefits factored out, the project's benefits still outweigh its costs by a sizable margin**, of between 2.7-to-1 and 4.2-to-1.

V. Other Environmental Reviews and Approvals

National Environmental Policy Act

FTA and WSF have prepared an EIS in compliance with the National and State Environmental Policy Acts (NEPA/SEPA). The Final EIS was signed by FTA and WSF in May 2013, and will be published June 7, 2013, with a ROD anticipated by August 2013. Environmental impacts and mitigation are described in the FEIS, which is located in the project library along with discipline reports and other studies: http://www.wsdot.wa.gov/Projects/Ferries/mukilteoterminal/multimodal/library.htm.

Legislative Approvals

The new terminal has the State Legislature's support as demonstrated by the $86.6 million commitment of state funds, and has broad support from the region and elected officials.

State and Local Planning

The Mukilteo Multimodal Ferry Terminal has been a significant project in the region's long-term plan, Transportation 2040, for many years. The project is in the regional and State Transportation Improvement Plans (TIP/STIP), with the Preliminary Engineering and ROW phases funded and programmed. Puget Sound Regional Council, the region's Metropolitan Planning Organization, confirmed in their letter of support that if MMFT is selected for a TIGER award, they will immediately process an amendment to the TIP and STIP to program the construction phase and TIGER funds. The TIGER funds will thus be in the STIP well in advance of the obligation date of May 5, 2014.

VI. Federal Wage Rate Certification (See Appendix F)